

REMARKS

Claim Rejections

Claims 1-4 and 7 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5, 949,654 to Fukuoka ("Fukuoka"). Applicants cancel claim 3 without prejudice or disclaimer, and traverse the rejection of claims 1, 2, 4 and 7.

With regard to independent claim 1, Fukuoka does not disclose or suggest at least a metal substrate having a recess which is large enough to fully receive the electronic component and which is defined by a metal outer frame and a metal bottom plate, the electronic component being mechanically fixed to the bottom surface of the recess, as recited in claim 1.

Fukuoka discloses semiconductor elements 102 which are mounted on a multilayer ceramic substrate 101 on which wiring circuits 104 are formed, wherein the area in which the semiconductor elements are mounted is covered by a metal cap 103 which is sealed to the multilayer ceramic substrate by a Kovar weld ring 110 (Fig. 1; column 16, lines 27-33; column 17, lines 13-20). Thus, Fukuoka's electronic element 102 is directly mounted on a wiring board one or one having a wiring circuit. The wiring board 101, *i.e.*, the substrate, has no recess. Further, the weld ring 110 is not a substrate for mounting the electronic element 102.

In contrast, Applicant's claimed metal substrate, an example of which is item 12 as shown in Applicant's Fig. 3, and more clearly in Fig. 5B, forms a recess 12a having a bottom to which the electronic component 11 is mechanically fixed. The metal substrate permits electrical connection between the electronic component fixed to the bottom surface of the recess and the wiring board fixed to the bottom surface of the metal substrate through the window. Clearly, the

metal substrate of Applicant's invention is different than the multilayer ceramic substrate of Fukuoka.

For at least the above reasons, independent claim 1 is patentable over Fukuoka. Claims 2, 4 and 7, which depend from claim 1, are patentable at least by virtue of their dependency.

Claims 13-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fukuoka in view of U.S. Patent No. 6,495,914 to Sekine *et al.* ("Sekine"). Applicants traverse this rejection.

The combination of Fukuoka and Sekine does not disclose or suggest wherein the metal substrate comprises a window that is opened from the bottom of the recess through to the bottom surface thereof, wherein the wiring board is fixed to the bottom surface of the metal substrate so that a portion of the wiring pattern is exposed in the recess through the window, and wherein the electronic component is electrically connected to the wiring pattern exposed in the recess through the window using a bonding wire, incorporated into the claims by virtue of their dependency from claim 1.

As established above, Fukuoka does not disclose or suggest the metal substrate recited in the claims. Sekine discloses a metal substrate having a recess for receiving a bare chip device. However, the metal substrate has no window. A groove (42') is buried with an insulating film (48) and used to separate a connection post (42) from the base substrate (41). Accordingly, the groove (42') differs from a window for passing a bonding wire.

In addition, the bare chip device is connected to conductor pattern (51-54) formed above the bare chip device (47). Thus, Sekine also does not disclose or suggest that the bare chip

device (47) is connected to a wiring board fixed to the bottom surface of the metal substrate with a bonding wire through the window.

Therefore, even if one of ordinary skill in the art at the time the invention was made had been motivated to combine the references, the combination would still not result in the features as claimed. Thus, claims 13-16 are patentable over the combination of Fukuoka and Sekine.

Conclusion

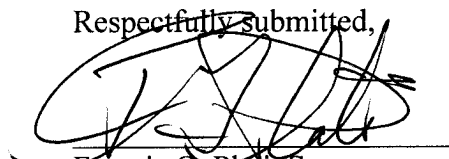
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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